



Sanitary Sewer Replacement Paxton Creek Mini-Basins PC-4C and PC-4E

Public Meeting:
October 27, 2015



William Weaver

Lower Paxton Township Sewer Department Director

Project Team

- *Property Owners*
- Board of Supervisors
- Sewer Authority Board
- Sewer Department Staff
 - Bill Weaver, Director
 - Jim Wetzel, Operations Supervisor
 - Bob Emrich, I/I Coordinator
 - Christine Mayer, Sewer Administration Staff
 - Inspection: LPT, GHD, HRG, compaction consultant
- Consulting Engineer-GHD
 - Kevin Shannon, P.E., Project Manager
 - Barry Wampler, Design Engineer
 - Melissa Smith, P.E., Project Engineer
- Contractor – **To be Determined**



Project Team

- Coordination with:
 - Township Staff
 - Emergency Services (e.g. Police, Ambulances, etc.)
 - School District Bus Coordinators
 - Other Utilities (e.g. Gas, Water, Electric, Cable, etc.)



Recognized Infiltration/Inflow (I/I) Problems

- Overflowing Manholes
- Sewer Basement Backups
- Exceeding Interceptor Capacity Limits within Inter-Municipal Agreements-Harrisburg/Susquehanna/Swatara
- PADEP Violations



Second Amendment to the Consent Decree Requirements - Paxton Creek Basin

- Replace asbestos cement and clay sanitary sewers that have reached their useful life including private sewers
- Test and replace PVC sewers that fail air test and are contributing unacceptable amounts of flow, including private sewers
- Eliminate Overflows and Basement Back-ups by 2022



Second Amendment to the Consent Decree Requirements - Paxton Creek Basin

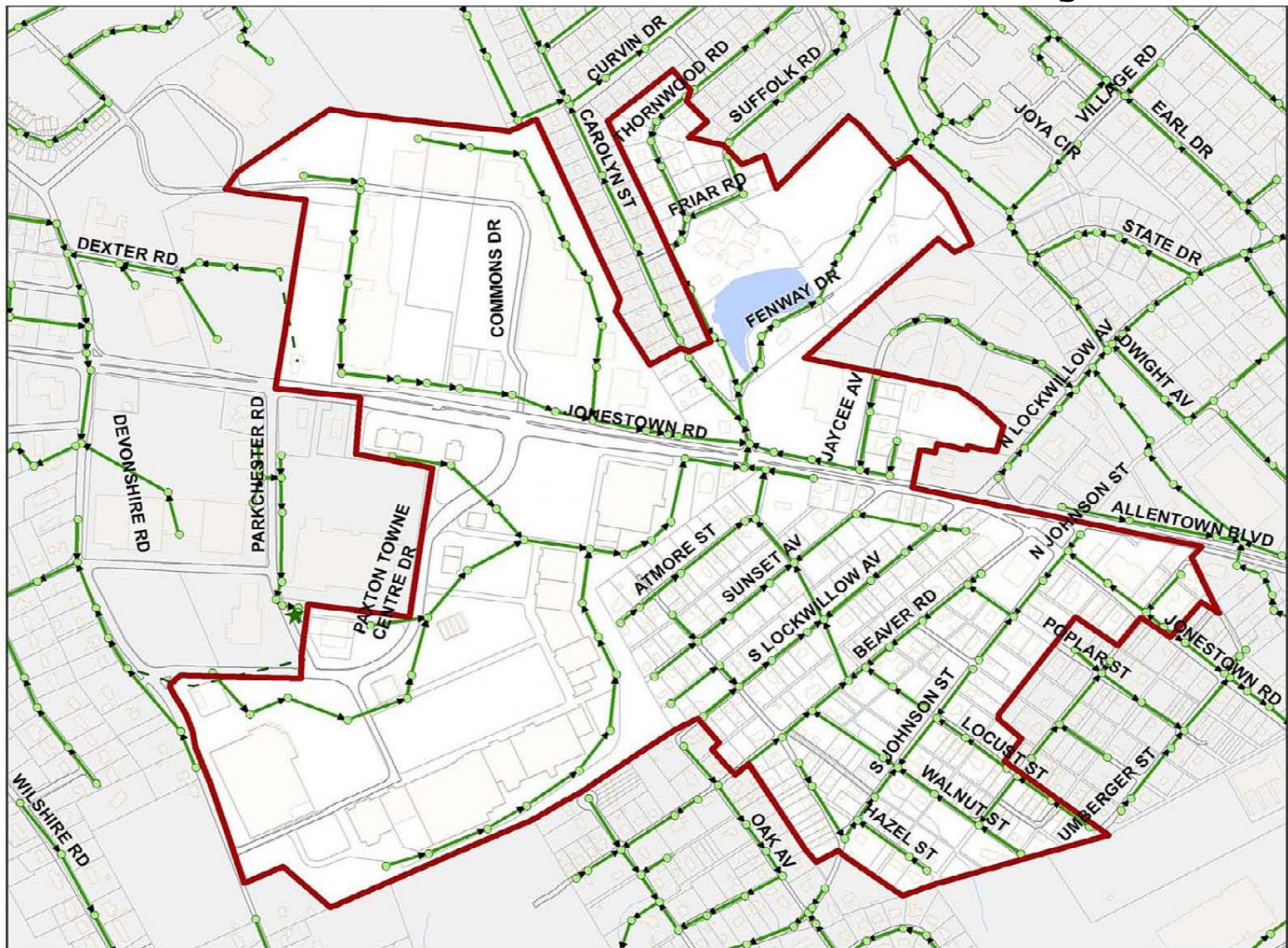
- Reduce Sewer System Hydraulic Overload by 2027 (Reducing the flow in the sewer system so that it will properly function without the threat of sewer backups and overflows)



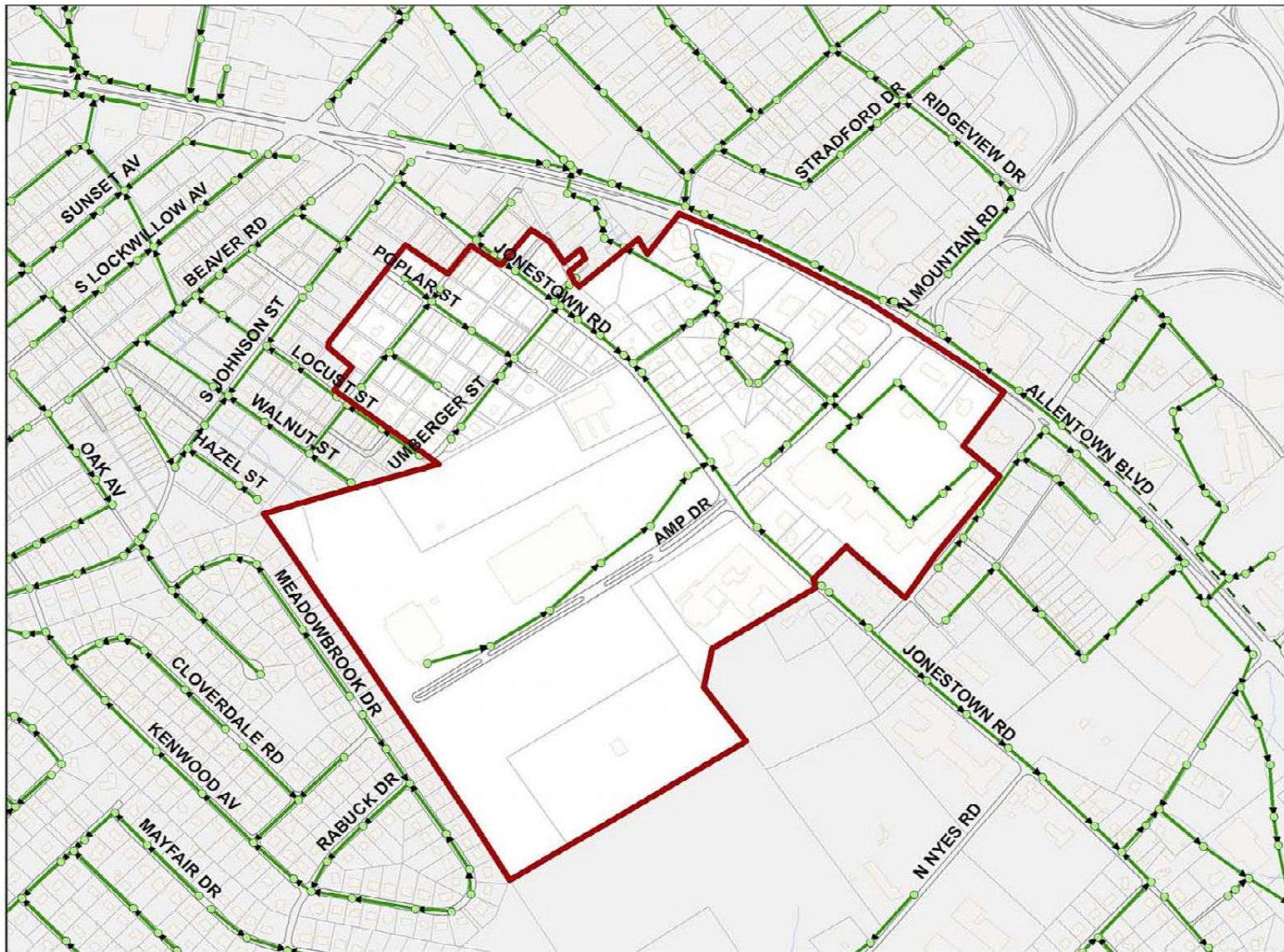
Excluded from Project

- The storm sewer system will **NOT** be replaced/rehabilitated or extended as part of this sanitary sewer replacement project.

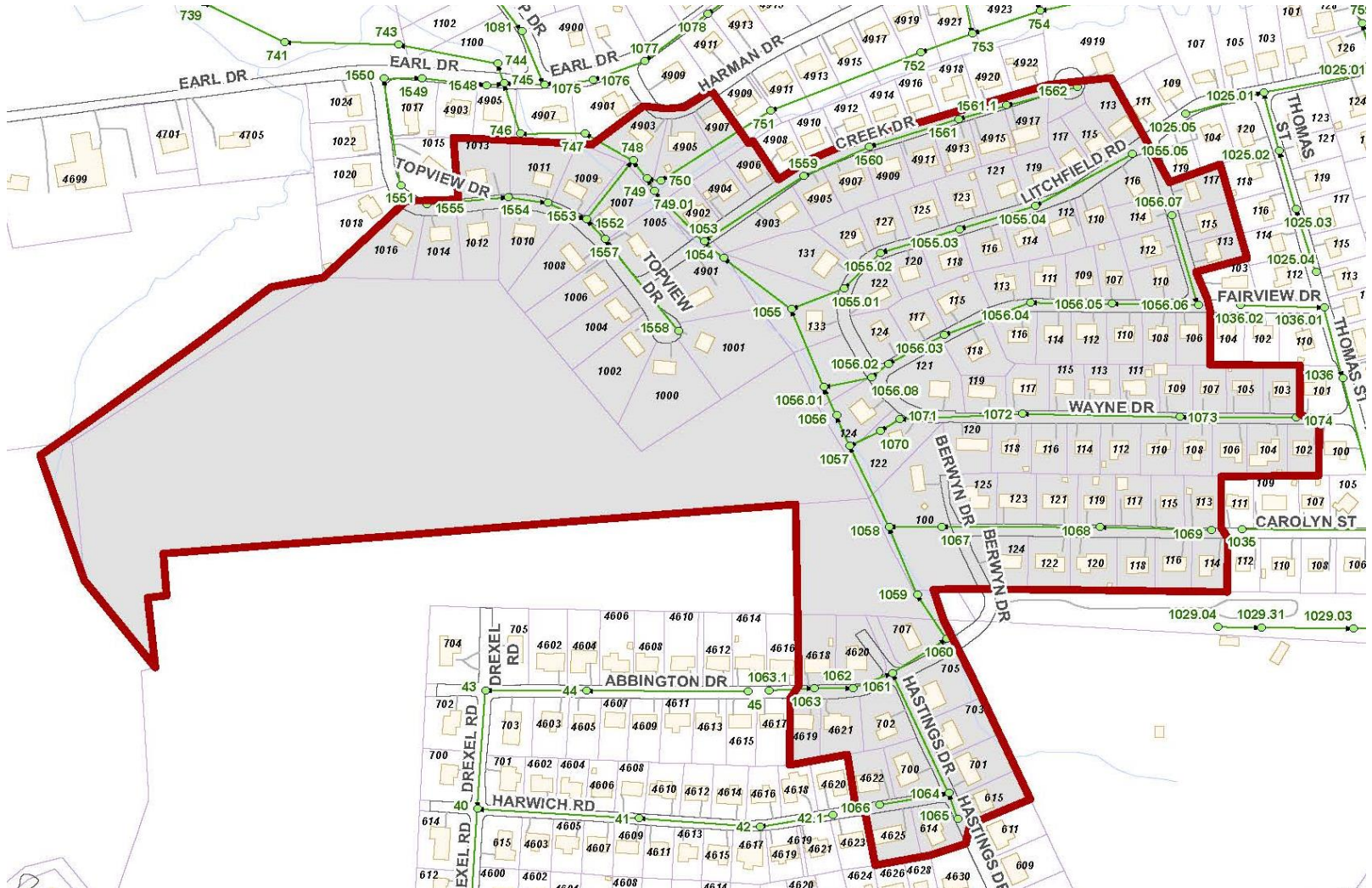
PC-4C Project Area



PC-4E Project Area



PC-4A Project Area (possible addition to contract)



Examples of System Failures

Offset Joints/Shear Breaks



Bad Transitions

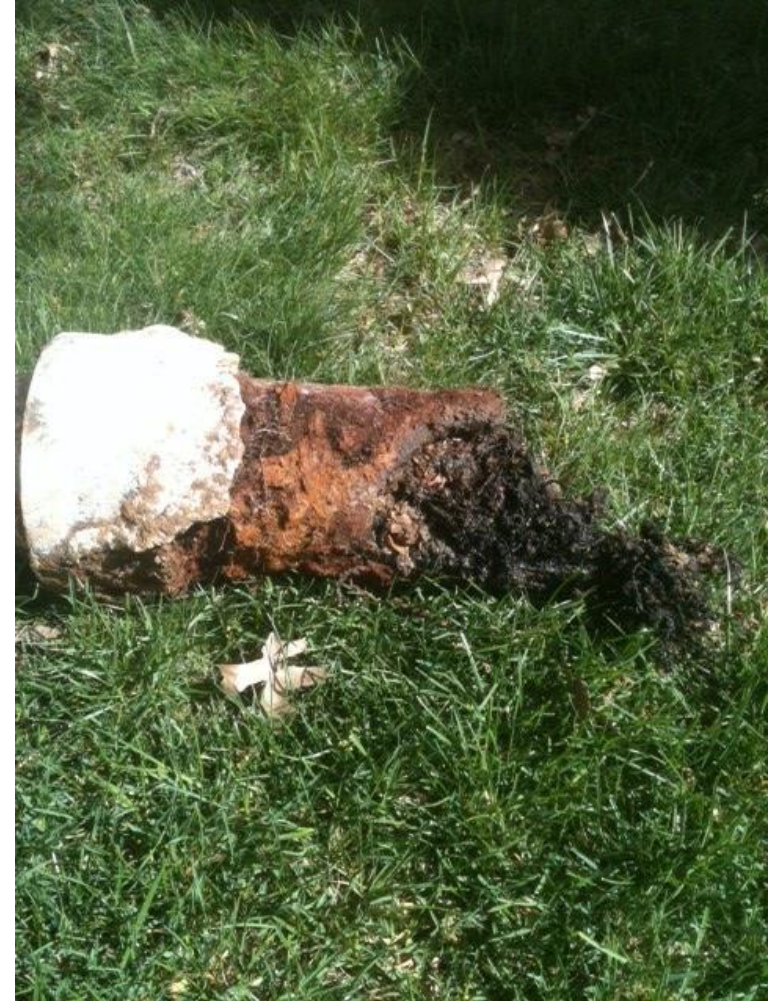


Examples of System Failures



Examples of System Failures

Root Intrusion ↴



Agreements Required for Project

- 329 Private Sewer Replacement Agreements
- 51 Permanent and/or Temporary Construction Easement Agreements



Process

- Survey and design project for sewer mainline and private sewer replacement, this includes ADA requirements for handicap ramps at intersections and final paving design
- Test pits to confirm locations of other utilities
- Test PVC sewer mains and manholes and design project for replacement of those that fail

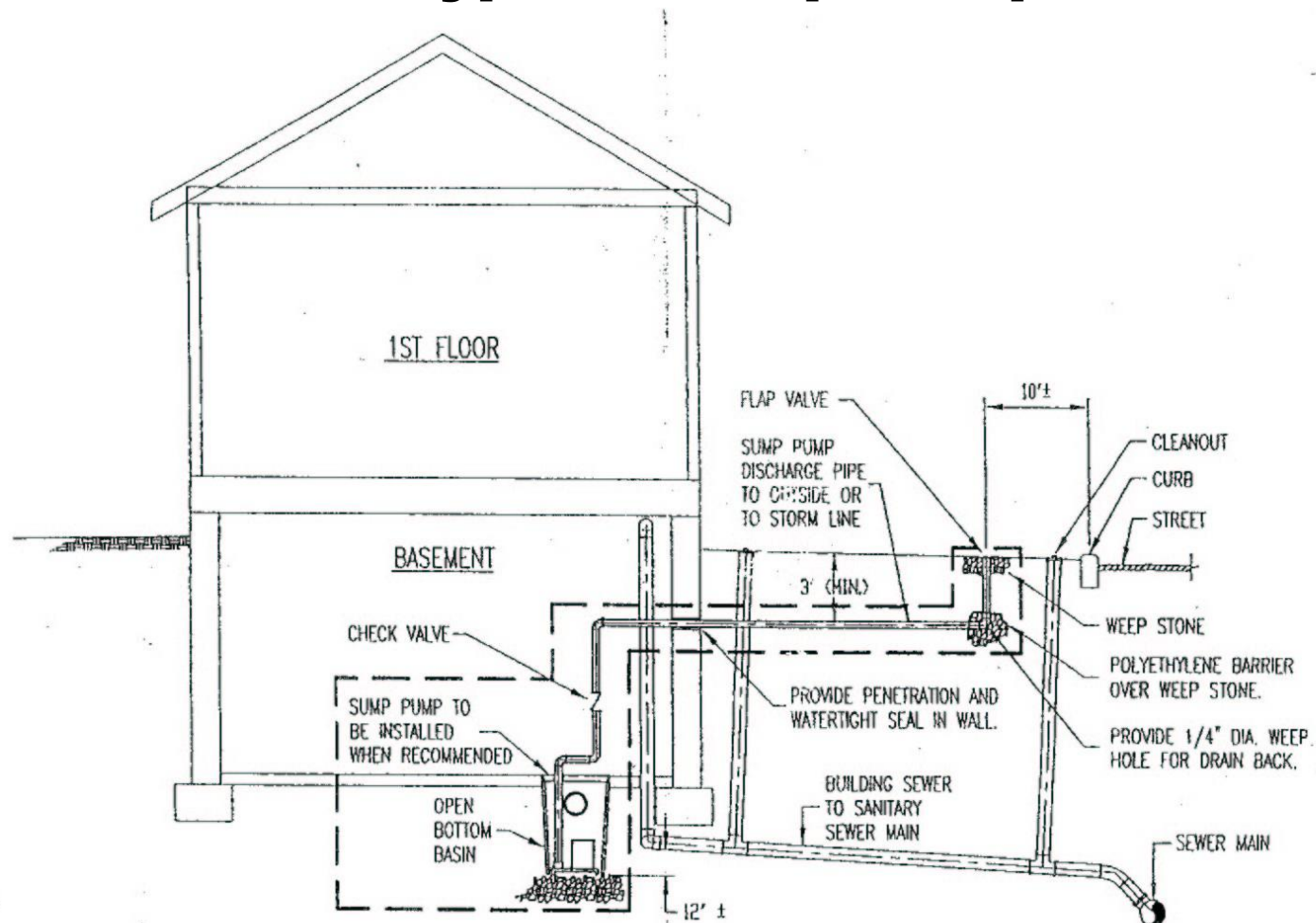
Process (Contd.)

- Conduct neighborhood meeting
- Receive *Private Sewer Repair/Replacement Agreements* & deeds
- Perform house inspections
- Perform pre-construction video taping
- Advertise bid and award contract
- Replace sewer mains and private sewers

Process (Contd.)

- Test PVC private sewers and replace those that fail
- Restore areas affected by construction
- Perform final paving and restoration
- Monitor for long-term success

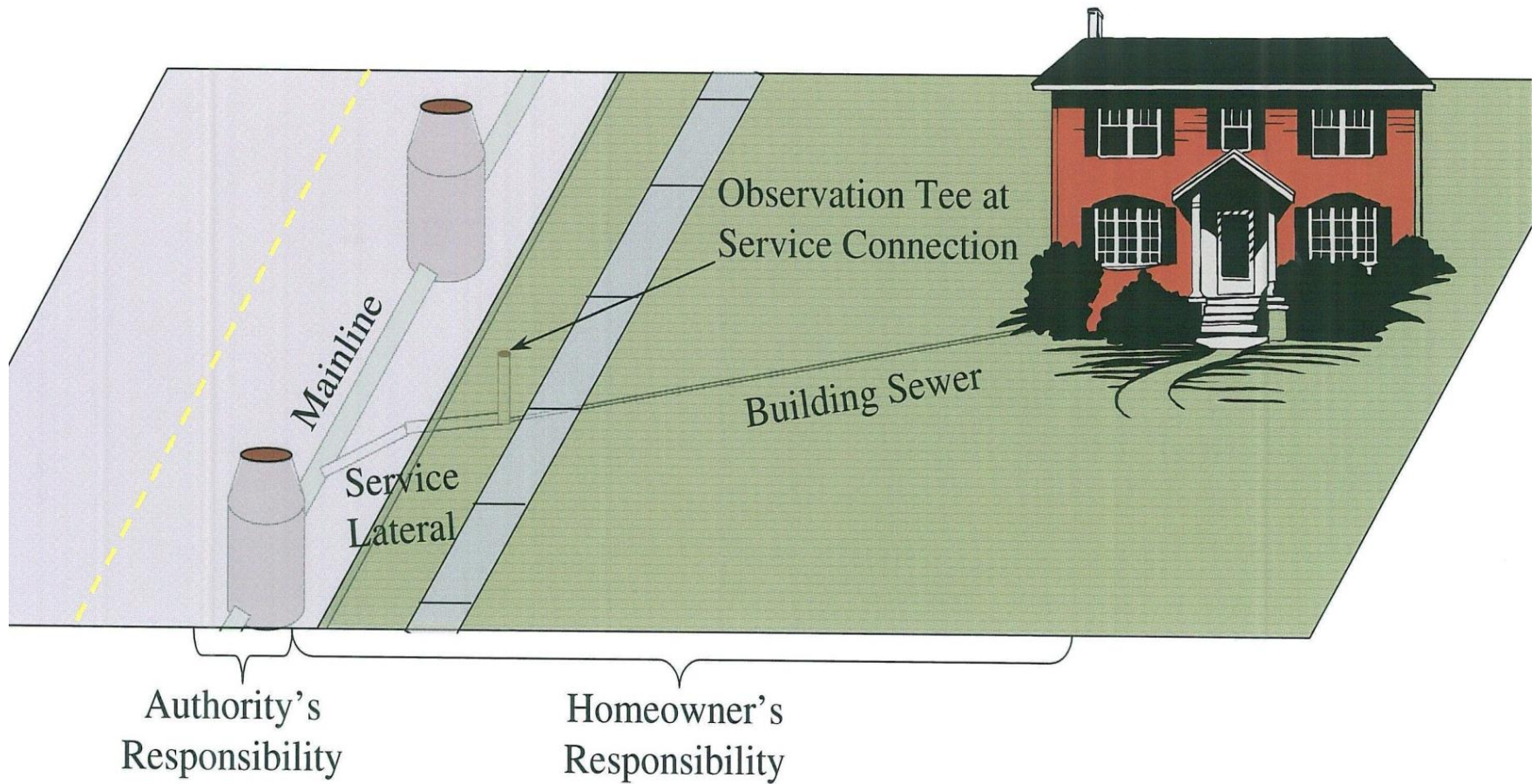
Typical Sump Pump Installation



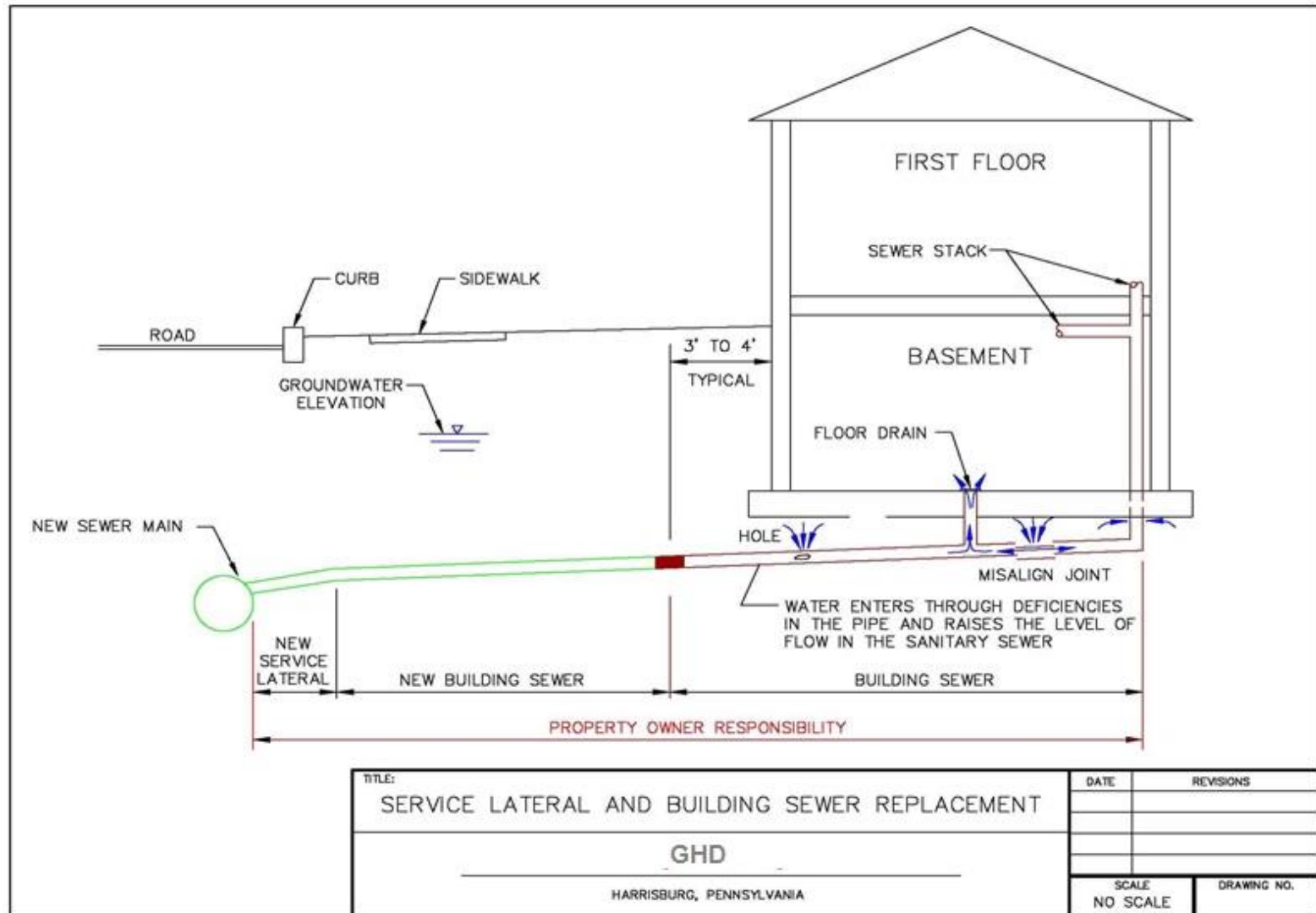
BASEMENT SERVED WITH PROPOSED SUMP PUMP

BUILDING SEWER REHABILITATION NEEDED WHERE
THERE IS NO EXISTING SUMP PUMP

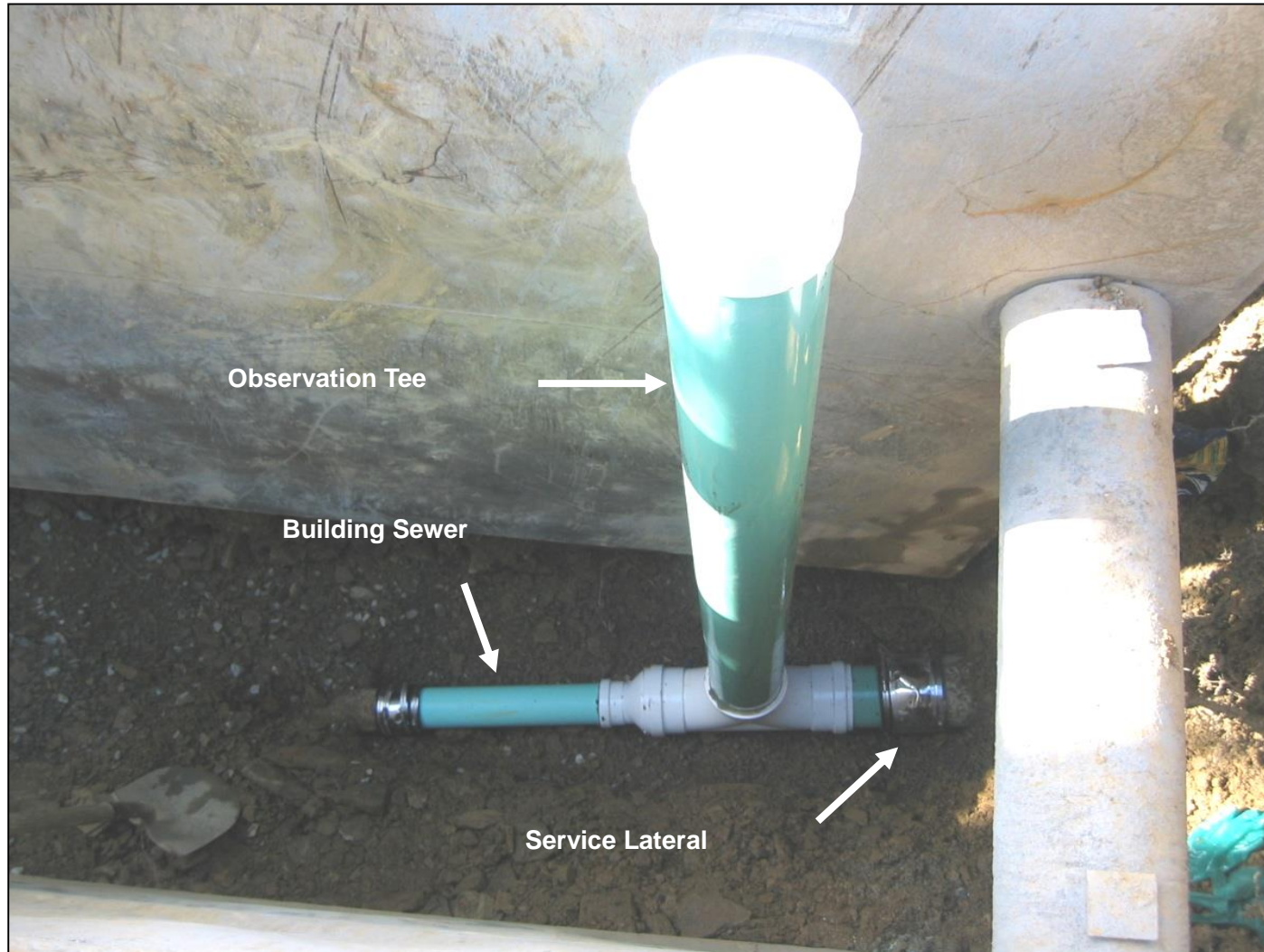
Typical Sewer System Layout



Property Owner Responsibility



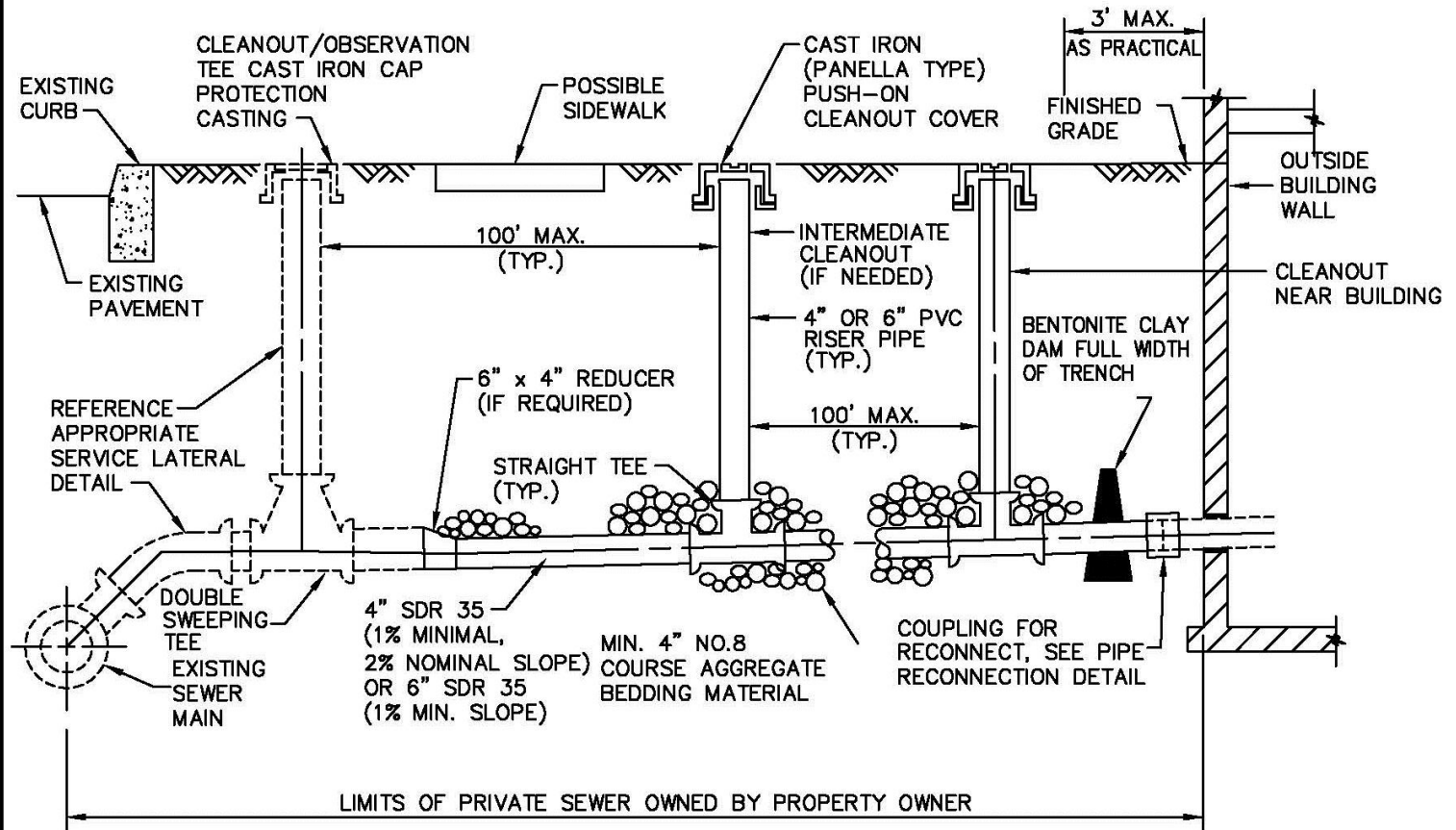
Service Laterals & Building Sewers



Service Laterals & Building Sewers

INSTALLATION/REPLACEMENT

PRIVATE SEWER



**What kind of disruption
can be expected during
construction on your
property?**

Service Laterals & Building Sewers



Typical building
sewer replacement
(during
construction)

Service Laterals & Building Sewers



Typical building
sewer replacement
(during
construction)

Service Laterals & Building Sewers



Typical building
sewer replacement
(prior to restoration)

Service Laterals & Building Sewers



Typical Sidewalk and
Lawn Restoration

Watered Lawn



Home owner must
water lawn once
seeded

Un-Watered Lawn



Home owner must
water lawn once
seeded

Un-Watered Lawn



Home owner must
water lawn once
seeded

**What kind of disruption
can be expected during
construction in the
streets?**

During Construction



Road
Conditions
During
Construction

During Construction



Road
Conditions
During
Construction

During Construction



During Construction



During Construction



Trench prior to
final paving

Traffic Control



Traffic access
will be limited
or detoured
during active
construction

Traffic Control



Be mindful
of stockpiled
materials

After Construction



Road after
final paving

Schedule Milestones

Agreements for building sewers	Oct-Nov 2015
Building inspections	Oct-Feb 2016
Advertise for bids	November 2015
Award contract	February 2016
Sewer construction started	March 2016
Restoration will be completed per work zone	
Final Completion	Fall 2017



Obstructions

- As provided in the agreement, any affected bushes, flowers, gardens, etc. to be preserved must be moved by the homeowner prior to construction.
- Trees determined to be obstructions to sewer replacement will be removed at the Township's expense.

Fences

- Any fences that impact construction must be temporarily moved and replaced by the homeowner if they want to guarantee that the fence is replaced in its original condition.
- If the fence is not moved prior to construction, it will be moved and replaced by the selected contractor. The original condition is not guaranteed.

Property Owner Responsibility

- Execute and Return Private Sewer Replacement Agreement and/or Deed of Dedication/Temporary Construction Easement Agreement
- Schedule Inspection
- Remove any obstructions that you wish to preserve, flowers, bushes etc. and replace after construction is complete



Property Owner Responsibility (contd.)

- Notify Lower Paxton Township Staff of any underground utilities installed by Property Owner including gas/water/ electric for swimming pools, dog fences, water lines for sprinkler systems and electric for landscape lighting
- Water grass after planting is complete



Private Sewer Replacement Agreement

PRIVATE SEWER REPLACEMENT AGREEMENT

THIS AGREEMENT, entered into this ____ day of _____, 2015 by and between LOWER PAXTON TOWNSHIP, (hereinafter “LPT”) a Township of the Second Class organized and existing under the Second Class Township Code, with offices located at 425 Prince Street, Harrisburg, Dauphin County, Pennsylvania, and **PROPERTY OWNER** (hereinafter “Property Owner”) who owns property at **PROPERTY ADDRESS**, Harrisburg, Dauphin County, Pennsylvania.

WHEREAS, LPT has established Resolution 2011-11 which sets forth terms, conditions and procedures by which the LPT shall assist customers in the correction of identified infiltration and inflow into the sanitary sewer system due to deficient conditions in private building sewers and laterals (“private sewer”), known as the Private Sewer Replacement Program; and

WHEREAS, Resolution 2011-11 provides that the Private Sewer Replacement Program shall be at no cost to participating property owners and further provides that to participate in this program Property Owners must provide access to their property for the purpose of replacement and shall also hold LPT harmless in regard to activities undertaken in or replacement of their private sewer; and

WHEREAS, the parties desire to cooperate in the replacement of Property Owner’s private sewer.

NOW, THEREFORE, in consideration of the mutual promises of the parties hereto, it is agreed as follows:



Private Sewer Replacement Agreement

1. LPT or its designee shall, free of charge, replace Property Owner's private sewer, including excavation, replacement of the private sewer pipe, backfilling the trench, grading, seeding and, if necessary, repair or replacement of sidewalks and driveways. Final repair of driveways, grading and seeding cannot be completed during the winter months. A temporary cold patch material or gravel will be used in the interim and lawns will be temporarily seeded or mulch cover installed. Permanent seeding will start within 30 days of the start of the planting season for private sewers replaced outside of the planting season. The grading and seeding performed by LPT or its designee shall be a one time final restoration and any future restoration of grading and seeding shall be the responsibility of the property owner. The property owner shall be responsible for watering seed and initial stands of grass.
2. Prior to the commencement of work, LPT or its designee, shall notify the PA Once Call System to have all underground facilities marked for excavation at your property. LPT shall be responsible for damages to any utilities that are properly marked. Property Owner acknowledges that they have responsibility to notify the Township, and mark in the field, any underground facilities that were installed by property owner, including but not limited to, gas, water and electric for pools, dog fences, sprinkler systems, and landscape lighting. Property owner shall remove from the work area described, all structures, fences, trees, bushes, shrubs, ornamental plants and flowers that property owner desires to preserve. In the event that LPT determines that any tree(s) are required to be removed within the work area, the tree(s) shall be removed by LPT in advance of the private sewer replacement free of charge by a Contractor selected by LPT.
3. Property Owner does hereby grant LPT, its officers, employees and agents temporary access to come upon the above improved property for the purpose of performing a complete private sewer replacement. The work area for the private sewer shall be a twenty (20) foot wide strip along the existing private sewer line extending from the main line to the building or if necessary, such location as agreed upon by LPT and Property Owners. All replacements conducted by LPT or its agents shall be undertaken in accordance with the Specifications.



Private Sewer Replacement Agreement

4. During the time the private sewer replacement and after the replacement is completed and put into private use, Property Owner shall hold harmless LPT, its officers and employees, from all claims, liabilities, suits, judgments, verdicts, actions or proceedings at law or equity of any kind whatsoever arising out of, connected with or caused by any replacement operation or matter in, of or related to the private sewer which is subject to this agreement, including among other things, injury to property and injury to and sickness and death of Property Owner. As defined in Resolution 2011-11 and this agreement, “hold harmless” shall mean only that the property owners are banned from filing suit against the Township, its agents, employees and assigns with respect to all activities undertaken in the repair or replacement of their building sewer and/or lateral.
5. Property Owner acknowledges that the work to be done under this agreement does not constitute an assumption of maintenance responsibility by the Township. After the replacement has been completed, the responsibility for maintenance of the private sewer shall remain with the Property Owner.
6. Property Owner acknowledges that he/she may experience groundwater problems following the completion of the replacement of the private sewer. Installation of a basement sump pump and/or water proofing the basement foundation may need to be completed following replacement of the private sewer. Property Owner acknowledges that the responsibility for water proofing and/or sump pump installations is the responsibility of the Property Owner.
7. This Agreement shall constitute the entire agreement between the parties hereto. Any amendments hereto shall not be effective unless set forth in writing and signed by the parties.



Private Sewer Replacement Agreement

WHEREFORE, the parties hereto intending to be legally bound hereby, set their hands and seals on the day and year first above written.

LOWER PAXTON TOWNSHIP

By _____
Authorized Representative (LPTA Use Only)

By _____
PROPERTY OWNER

Please provide a **DAYTIME telephone number** where LPT staff can reach the property owner to schedule an inspection of the inside property for replacement of private sewer line.

(Home)
(Cell – Mr/Mrs)
(Work- Mr/Mrs)
(E-mail)

(please print clearly)



Sewer Easement Deed of Dedication

**DEED OF DEDICATION
SANITARY SEWER EASEMENT
AND TEMPORARY CONSTRUCTION EASEMENT
TAX PARCEL #35-014-016**

THIS INDENTURE, made the ____ day of _____, in the year two thousand ten (2010)

BETWEEN

, Grantor

AND

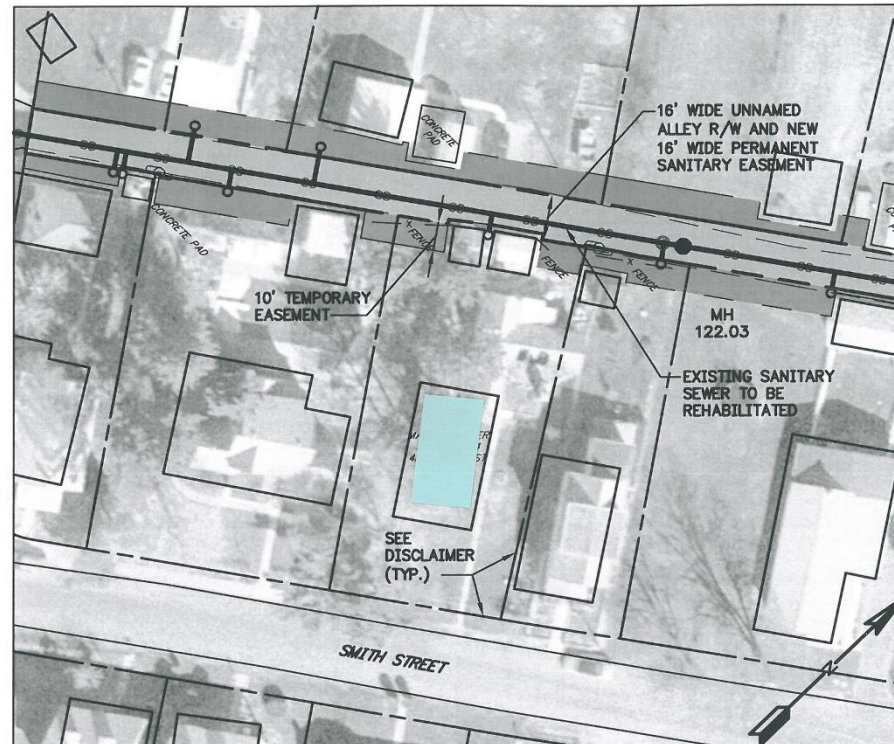
LOWER PAXTON TOWNSHIP AUTHORITY, Dauphin County, Pennsylvania Grantee

WITNESSETH That the said Grantor, for and in consideration of the sum of ONE DOLLAR (\$1.00), has granted, bargained, released and confirmed and by those presents does grant, bargain, release and confirm unto the said Grantee, its successors and assigns that certain permanent easement and temporary construction easement to the Lower Paxton Township Authority, County of Dauphin, Pennsylvania, as more particularly described on the attached plat marked as Exhibit "A".

SAID permanent and temporary construction easements being part of the same premises which Lower Paxton Township Authority, grantor, by its deed dated October 8, 1979 and recorded in the Office of the Recorder of Deeds in and for Dauphin County, Pennsylvania, in Deed Book 78, page 149, granted and conveyed unto _____, Grantor herein.



Example Easement Plat



LEGEND:

- TEMPORARY SANITARY EASEMENT BOUNDARY
- PERMANENT SANITARY EASEMENT BOUNDARY
- APPROXIMATE PROPERTY LINE

PERMANENT SANITARY EASEMENT BOUNDS ALL LANDS WITHIN 15' OF CENTER OF AS-BUILT SANITARY SEWER LINES, UNLESS OTHERWISE NOTED.

TEMPORARY CONSTRUCTION EASEMENT BOUNDS AN ADDITIONAL 10' OF LAND BEYOND THE PERMANENT SANITARY EASEMENT OR PUBLIC RIGHT-OF-WAY, UNLESS OTHERWISE NOTED.

PERMANENT SANITARY EASEMENT DISTANCE BEYOND DEAD-END LINES IS EQUAL TO 15' BEYOND THE AS-BUILT MANHOLE, UNLESS OTHERWISE NOTED.

TEMPORARY CONSTRUCTION EASEMENT DISTANCE BEYOND DEAD-END LINES IS AN ADDITIONAL 20' BEYOND THE PERMANENT SANITARY EASEMENT, UNLESS OTHERWISE NOTED.

PHYSICAL FEATURES SHOWN ON THIS PLAN ARE BASED ON AERIAL PHOTOGRAMMETRY PROVIDED BY KEDDAL AERIAL MAPPING, PITTSBURGH, PA., 2004, WITH PHOTOGRAMMETRIC GROUND CONTROL ESTABLISHED BY R.J. FISHER ASSOCIATES, NEW CUMBERLAND, PA., 2011.

ANY SURVEYING PERFORMED WAS FOR THE PURPOSE OF DESIGNING THE PC-5E SANITARY SEWER REPLACEMENT PROJECT ONLY. THIS PLAN IS A PORTION OF THE PC-5E SANITARY SEWER REPLACEMENT PROJECT PLANS PREPARED BY CET ENGINEERING SERVICES, HARRISBURG, PA. DATED 2013.

DISCLAIMER:

NO FIELD SURVEYS OF ANY KIND WERE PERFORMED TO DETERMINE OR VERIFY THE PROPERTY INFORMATION SHOWN. PROPERTY INFORMATION SHOWN ON THIS PLAN WAS TAKEN DIRECTLY FROM DAUPHIN COUNTY TAX ASSESSMENT MAPS AND RECORDS WITHOUT VERIFICATION.

EXHIBIT A
SANITARY SEWER PLAN
LOWER PAXTON
TOWNSHIP AUTHORITY

LOWER PAXTON TOWNSHIP
DAUPHIN COUNTY, PENNSYLVANIA

SCALE: 1" = 40'

MAY 17, 2013

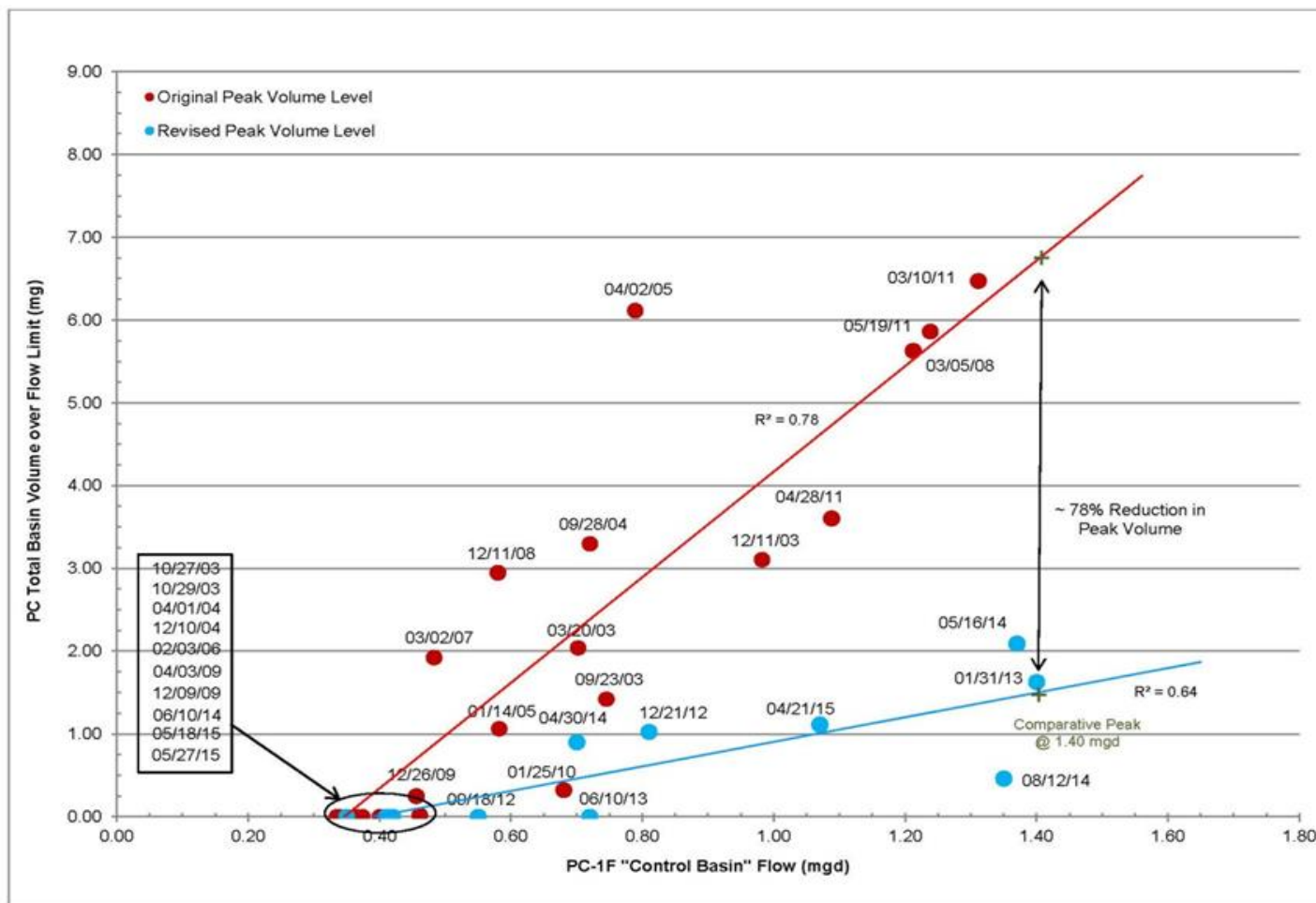
DWG. No. 35-053-014



Flow Monitoring- Infiltration/Inflow Volume Reduction

LOWER PAXTON TOWNSHIP AUTHORITY

Volume Over Flow Limit Curve @ Target Flow 10.57 mgd



Flow Monitoring- Sub-Basin Characteristic Curve



LOWER PAXTON TOWNSHIP AUTHORITY

Basin Characteristic Curve

Basin: PC-5 (PostRehab)

Description: MH 99.05 [Prev. MH 104]

Current EDUs: 1253

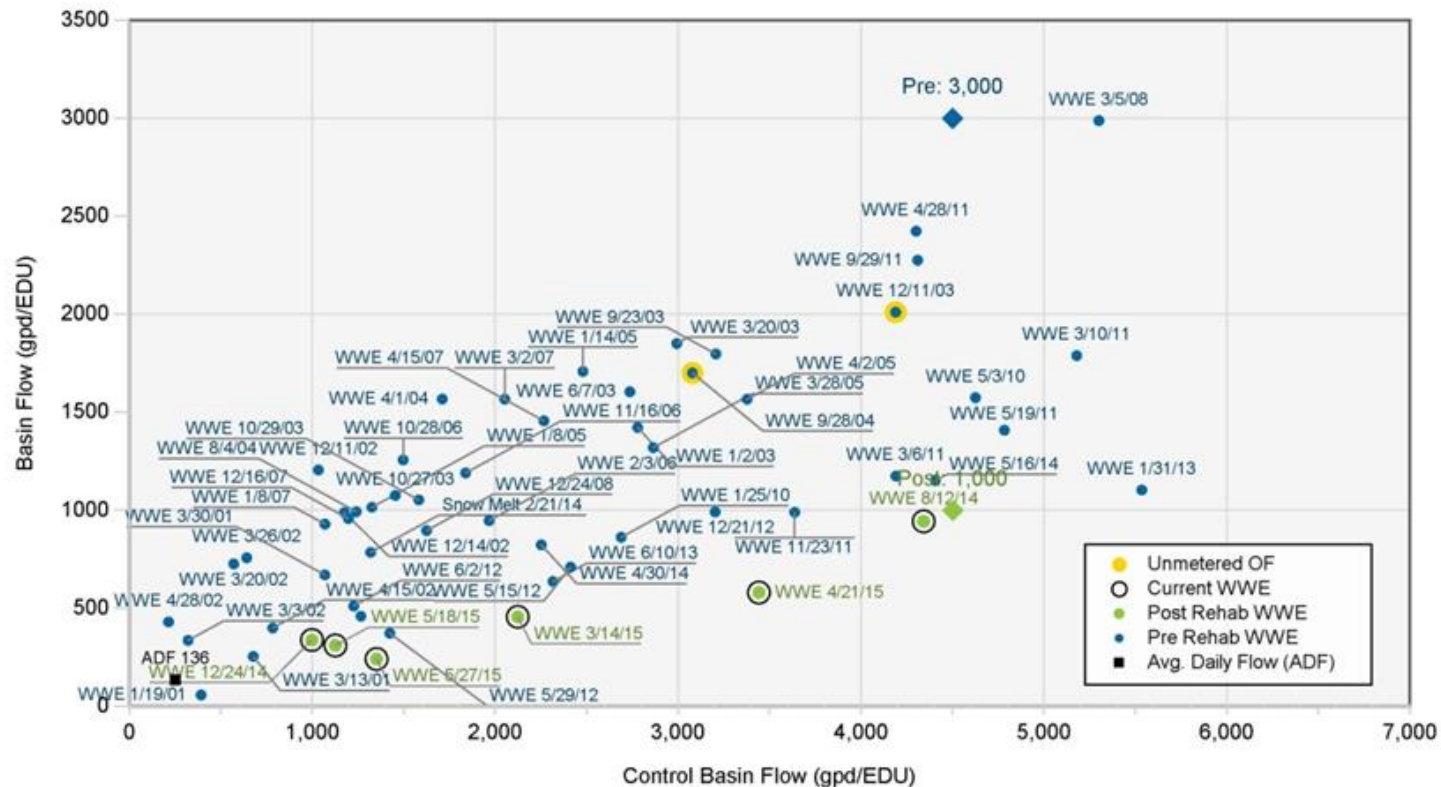
Basin Priority:

Pre Comparative Peak: 3,000 gpd/EDU (3.76 mgd)

Rehab End Date: 9/29/2014

Post Comparative Peak: 1,000 gpd/EDU (1.25 mgd)

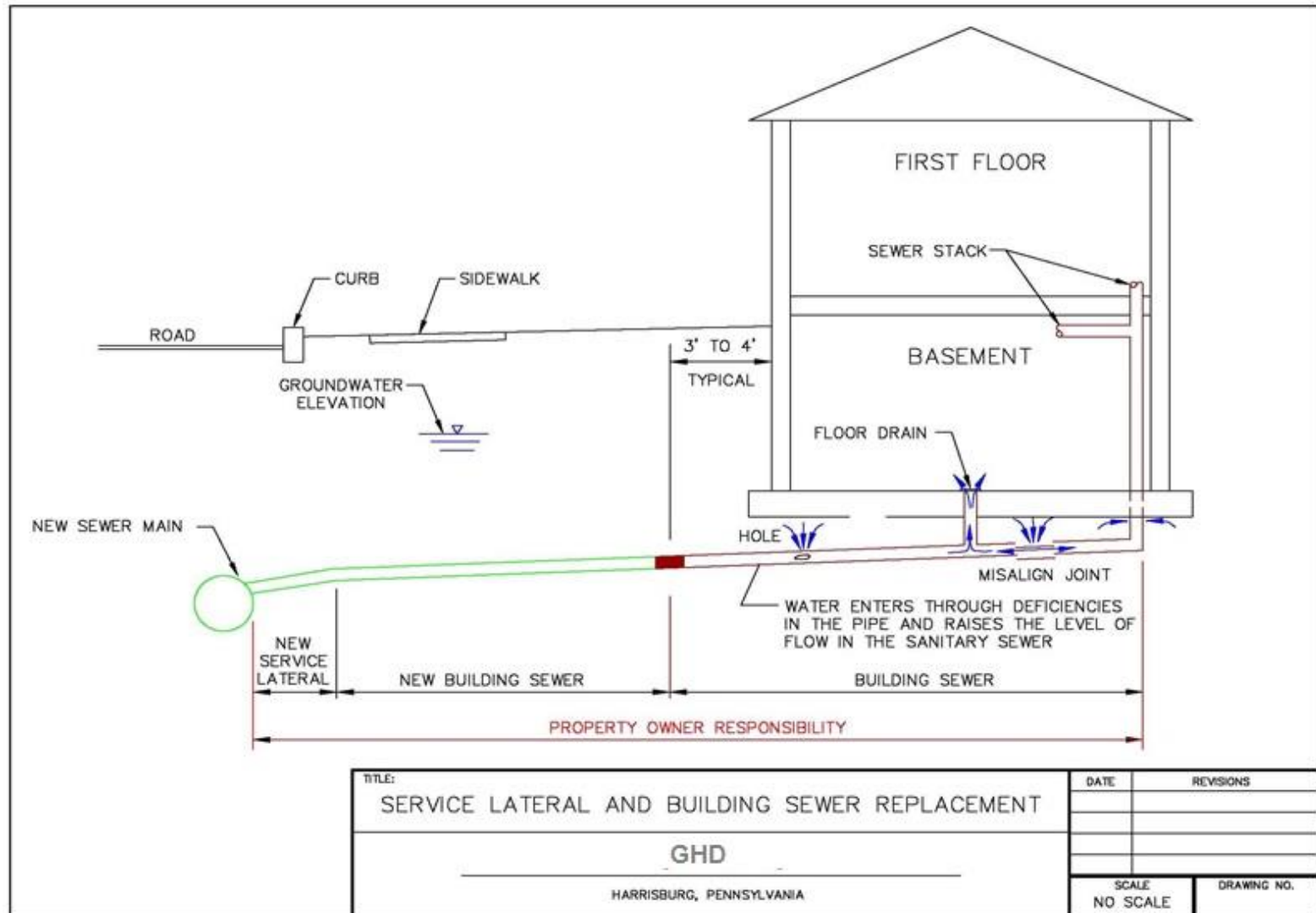
Removal: 100.00% Excess I/I (2.51 mgd)



Flow Monitoring

- Record three wet weather events. If above 1,500 gallons per day per house investigate underslab plumbing.
- Replace underslab plumbing found to be leaking if cost effective.

Property Owner Responsibility



Total Township Sewer Replacement Plan Including Paxton/Beaver/Spring Creeks & Asylum Run

- Total Sewer Repair/Replacement Plan includes replacement of 65% of the sewer system in Paxton Creek , Beaver Creek, Spring Creek and Asylum Run.
- Cost estimated at \$230 Million. \$105 Million spent to date.
- Sewer Rate increase anticipated at \$9/Quarter each year for next 12-14 years.



Preliminary Construction Cost Estimate

**PC-4C/4E Approximately
\$7,400,000**



Benefits to Community

- 50 year old public sewer system replaced, including private sewers
- Neighborhood roads replaced and overlaid following the sewer replacement
- Significant savings to the Township with the elimination of 50% of the roads to be overlaid over the next 15 to 25 years



Benefits to Community (contd.)

- ADA ramps replaced to comply with current regulations
- Community asset preserved
- Environment protected (elimination of overflows and basement backups)

Thank You

Questions / Comments

